UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,286	07/05/2005	Paul R. Routley	30740/285906	6677

4743 7590 03/25/2009

MARSHALL, GERSTEIN & BORUN LLP
233 SOUTH WACKER DRIVE
6300 SEARS TOWER
CHICAGO, IL 60606-6357

EXAMINER	
WALTHALL, ALLISON N	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
03/25/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/518,286	ROUTLEY ET AL.	
	Examiner	Art Unit	
	ALLISON WALTHALL	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4,5,8-13,20-27 and 30-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4,5,8-13,20-27,30-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/16/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/13/2009 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claim 30** is rejected under 35 U.S.C. 102(b) as being anticipated by Sakamoto, US Patent 5,594,463.

Regarding claim 30, Sakamoto discloses in FIG. 6 a Display driver control circuitry for controlling a display driver for an electroluminescent display (30), the display comprising a plurality of electroluminescent display elements (52), the driver including a plurality of substantially constant current generators (88) for simultaneously driving said plurality of display elements, each said constant current generator being configured for regulating the current on an associated display drive line (A0, A1, etc…) driving a set of

said electroluminescent display elements (52), the display driver control circuitry comprising:

a drive voltage sensor (terminal A, col. 7 lines 7-14) for sensing a voltage on a first line (A0) in which the current is regulated by said constant current generator; and

a voltage controller (CPU 54, col. 7 lines 14-20) coupled to said drive voltage sensor for controlling the voltage of a supply (Vd) for said constant current generator in response to said sensed voltage, and configured to control said supply voltage to increase the efficiency of said display driver,

wherein said voltage controller (54) is configured to reduce said supply voltage (driving voltage Vd reduced by the estimated voltage drop Vf of the EL element, col. 7 lines 40-46) when this will not substantially reduce said regulated current and/or said display brightness (the driving current value is set S102, which is the brightness, while the voltage drop is to be detected S110 by setting the drive current fixed to estimate the voltage drop across the anode and cathode of the EL element to configure the driving voltage Vd, col. 7 lines 18-61), and

said voltage controller (54) is configured to control said supply voltage (Vd) such that said constant current generator (88) operates in the vicinity of its compliance limit (driving current value is set S102, col. 7 lines 24-25), and

wherein a said constant current generator comprises a bipolar transistor (transistors 91) connected in series between a said drive line (line connected to the collector of transistors 91) and a supply voltage line (line connected to emitter of transistors 91) providing said supply voltage to said constant current generator, and

wherein said bipolar transistor has an emitter terminal directly connected to said supply voltage line (Shown in FIG. 6).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1, 4-5, 10-13, 20, 22, 25-27, 32, and 34** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Everitt, US Pub. 2002/0167471.

Regarding to claim 1, Sakamoto discloses in FIG. 6 a Display driver control circuitry for controlling a display driver for an electroluminescent display (30), the display comprising a plurality of electroluminescent display elements (52), the driver including a plurality of substantially constant current generators (88) for simultaneously driving said plurality of display elements, each said constant current generator being configured for regulating the current on an associated display drive line (A0, A1, etc…) driving a set of said electroluminescent display elements (52), the display driver control circuitry comprising:

a drive voltage sensor (Terminal A, Col. 7 lines 14-20) for sensing a voltage on a first line (A0) in which the current is regulated by said constant current generator; and

a voltage controller (CPU 54, Col. 7 lines 14-20) coupled to said drive voltage sensor for controlling the voltage of a supply (Vd) for said constant current generator in

response to said sensed voltage, and configured to control said supply voltage to increase the efficiency of said display driver;

wherein said voltage controller (54) is configured to reduce said supply voltage (driving voltage Vd reduced by the estimated voltage drop Vf of the EL element, col. 7 lines 40-46) when this will not substantially reduce said regulated current and/or said display brightness (the driving current value is set S102, which is the brightness, while the voltage drop is to be detected S110 by setting the drive current fixed to estimate the voltage drop across the anode and cathode of the EL element to configure the driving voltage Vd, col. 7 lines 18-61);

a maximum voltage detector to detect a maximum voltage of said drive line sensed voltages (Device performing steps S108 and 110, the highest degree of voltage is detected, Col. 7 lines 47-50);

a difference detector to detect a difference between said maximum voltage and said supply voltage (Device performing steps S108 and 110, detects the difference of the highest degree of voltage, maximum voltage, and the voltage at the electric source, Col. 7 lines 47-50); and

a comparator (Device performing Step S114, After calculating the difference of the maximum voltage and the supply voltage, the value is compared to the estimated driving voltage Vd, Col. 7 lines 51-61) to compare said difference with a threshold defining an estimated said compliance limit of a said constant current generator; and

wherein said voltage controller is responsive to an output of said comparator to control said supply voltage (Vd, Col. 7 lines 21-23) such that a said constant current

generator driving said drive line having said detected maximum voltage operates in the vicinity of the compliance limit of the said constant current generator (Step S116, if the output of the comparator in Step S114 has a maximum value able to be set greater than the estimated value, then the driving voltage is changed, Col. 7 lines 51-61, to drive in the compliance limit of the current value set S102, Col. 7 lines 24-25).

But, Sakamoto does not specifically disclose a drive voltage sensor for sensing the voltage on each said display drive line;

However, Everitt teaches in Fig. 4 and 7 a display driver control circuitry further comprising a drive voltage sensor for sensing the voltage on each said display drive line (Voltage drivers 304 connected to each column and also a calibration circuit 338 , Page 3 in Paragraph [0034], to measure the voltages from each column, Page 5 in Paragraph [0055]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have used a calibration circuit for measuring voltage for each of the driving line as taught by Everitt in place of the drive voltage sensor of Sakamoto for the purpose of power reduction for the display (Page 5 in Paragraph [0064]).

Regarding claim 4, Sakamoto discloses further in Fig. 11 comprising means to determine a compliance limit for use by said voltage controller (CPU 54 outputs current command for the constant current source 88 to be controlled at an appropriate value, col. 9 lines 54-63).

Regarding claim 5, Sakamoto discloses further in Fig. 6 and 7 comprising a supply voltage sensor (Terminal B, S108 and S110, col. 7 lines 47-50) for sensing said supply voltage (Vd), and means to determine a difference between said supply voltage (voltage Vd at the electric source) and said first line voltage (the voltage Vx that is increased in the highest degree), and wherein said voltage controller is configured to control said supply voltage responsive to said difference (step S114, col. 7 lines 51-61).

Regarding claim 10, Sakamoto discloses wherein said display has at least one control line (lines coming from PWM 48-0, 48-1, etc…, col. 6 lines 56-67 to col. 7 lines 1-6) for controlling the illumination of said at least one electroluminescent display element (52), wherein said drive voltage sensor is configured to sense the voltage on said display control line (terminal A), and wherein said voltage controller (82) has an output for controlling an adjustable power supply configured for providing said supply voltage.

Regarding claim 11, Sakamoto discloses in Fig. 2 and 6 a display driver (X driver 32, col. 5 lines 15-19) including the display driver control circuitry of claim 1.

Regarding claim 12, Everitt discloses wherein said electroluminescent display element comprises an organic light emitting diode (Page 1 in Paragraph [0004]).

Regarding claim 13, Sakamoto discloses in Fig. 6 and 7 a method of reducing the power consumption of a display driver driving an electroluminescent display (30), the display comprising a plurality of electroluminescent display elements (52), the driver (X driver 32) including a plurality of substantially constant current generators (constant current source 88, col. 6 lines 56-59) for simultaneously driving said plurality of the

display elements, each said constant current generator being configured for regulating the current on an associated display drive line (A0, A1, etc...) driving a set of said electroluminescent display elements (52), the display having a power supply for supplying power at a supply voltage for said current generator, the method comprising:

sensing (terminal A, col. 7 lines 7-14) a voltage on each said display drive line coupled to each respective said current generator (In view of Everitt, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have used a calibration circuit for measuring voltage for each of the driving line as taught by Everitt in place of the drive voltage sensor of Sakamoto for the purpose of power reduction for the display, Page 5 in Paragraph [0064] of the Everitt reference), and

controlling (CPU 54) said supply voltage responsive to said sensed voltage (Vx) to reduce said supply voltage (driving voltage Vd reduced by the estimated voltage drop Vf of the EL element, col. 7 lines 40-46) when a reduction may be made without substantially altering said regulated current (the driving current value is set S102, while the voltage drop is to be detected S110 by setting the drive current fixed to estimate the voltage drop across the anode and cathode of the EL element to configure the driving voltage Vd, col. 7 lines 18-61) and such that said current generator operates at or near its compliance limit (driving current value is set S102, col. 7 lines 24-25); and

wherein said controlling comprises:

detecting a maximum voltage of said drive line sensed voltages (Steps S108 and 110, the highest degree of voltage is detected, Col. 7 lines 47-50);

determining a difference between said maximum voltage and said supply voltage (Steps S108 and 110, detects the difference of the highest degree of voltage, maximum voltage, and the voltage at the electric source, Col. 7 lines 47-50);

comparing said difference with a threshold defining an estimated said compliance limit of a said constant current generator (Step S114, After calculating the difference of the maximum voltage and the supply voltage, the value is compared to the estimated driving voltage Vd, Col. 7 lines 51-61); and

controlling said supply voltage (Vd, Col. 7 lines 21-23) using an output of said comparing such that a said constant current generator driving said drive line having said detected maximum voltage operates in the vicinity of the compliance limit of the said constant current generator (Step S116, if the output of the comparator in Step S114 has a maximum value able to be set greater than the estimated value, then the driving voltage is changed, Col. 7 lines 51-61, to drive in the compliance limit of the current value set S102, Col. 7 lines 24-25).

Regarding claim 20, Sakamoto discloses a method wherein a said substantially constant current generator comprises a current source (constant current source 88).

Regarding claim 22, Sakamoto discloses in Fig. 2 and 6 a method wherein said display comprises a passive matrix display having a plurality of electroluminescent display elements (52) and a plurality of row electrodes (K0, K1, etc…) and a plurality of column electrodes (K0, K1, etc…) for addressing said display elements, and wherein said driver (X driver 32) is coupled to at least one of said plurality of row electrodes (K0,

K1, etc…) and said plurality of said column electrodes (A0, A1, etc…) for driving said display.

Regarding claim 25, Everitt discloses wherein said electroluminescent display element comprises an organic light emitting diode (Page 1 in Paragraph [0004]).

Regarding claim 26, Sakamoto discloses a carrier carrying processor control code (ROM 58 connected to CPU 54, Fig. 5) to implement the method of claim 13.

Regarding claim 27, Sakamoto discloses a Display driver circuitry (X driver 32, col. 5 lines 15-19) configured to implement the method of claim 13

Regarding claim 32, Sakamoto discloses in FIG. 6 a Display driver control circuitry for controlling a display driver for an electroluminescent display (30), the display comprising a plurality of electroluminescent display elements (52), the driver including a plurality of substantially constant current generators (88) for simultaneously driving said plurality of display elements, each said constant current generator being configured for regulating the current on an associated display drive line (A0, A1, etc…) driving a set of said electroluminescent display elements (52), the display driver control circuitry comprising:

a drive voltage sensor (terminal A, col. 7 lines 7-14) for sensing a voltage on a first line (A0) in which the current is regulated by said constant current generator; and

a voltage controller (CPU 54, col. 7 lines 14-20) coupled to said drive voltage sensor for controlling the voltage of a supply (Vd) for said constant current generator in response to said sensed voltage, and configured to control said supply voltage to increase the efficiency of said display driver,

wherein said voltage controller (54) is configured to reduce said supply voltage (driving voltage Vd reduced by the estimated voltage drop Vf of the EL element, col. 7 lines 40-46) when this will not substantially reduce said regulated current and/or said display brightness (the driving current value is set S102, which is the brightness, while the voltage drop is to be detected S110 by setting the drive current fixed to estimate the voltage drop across the anode and cathode of the EL element to configure the driving voltage Vd, col. 7 lines 18-61), and

said voltage controller (54) is configured to control said supply voltage (Vd) such that said constant current generator (88) operates in the vicinity of its compliance limit (driving current value is set S102, col. 7 lines 24-25), and

but Sakamoto does not specifically disclose a system to dynamically determine said compliance limit for controlling said supply voltage.

However, Everitt teaches a system (Voltage correction table) to dynamically determine said compliance limit for controlling said supply voltage (Correction table is used to identify an appropriate voltage for driving the matrix 400 either prior to and/or during normal circuit operation, Page 3 paragraphs [0036]-[0037]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have used the system as taught by Everitt to dynamically determine a compliant limit in the circuit of Sakamoto for the purpose of saving power and efficient use of the display by providing appropriate voltages.

Regarding claim 34, this claim is substantially similar to claim 33; therefore this claim is rejected under the same basis as referenced above.

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Saller et al, US Patent 4,766,367.

Regarding claim 31, Sakamoto discloses in FIG. 6 a Display driver control circuitry for controlling a display driver for an electroluminescent display (30), the display comprising a plurality of electroluminescent display elements (52), the driver including a plurality of substantially constant current generators (88) for simultaneously driving said plurality of display elements, each said constant current generator being configured for regulating the current on an associated display drive line (A0, A1, etc…) driving a set of said electroluminescent display elements (52), the display driver control circuitry comprising:

a drive voltage sensor (terminal A, col. 7 lines 7-14) for sensing a voltage on a first line (A0) in which the current is regulated by said constant current generator; and

a voltage controller (CPU 54, col. 7 lines 14-20) coupled to said drive voltage sensor for controlling the voltage of a supply (Vd) for said constant current generator in response to said sensed voltage, and configured to control said supply voltage to increase the efficiency of said display driver,

wherein said voltage controller (54) is configured to reduce said supply voltage (driving voltage Vd reduced by the estimated voltage drop Vf of the EL element, col. 7 lines 40-46) when this will not substantially reduce said regulated current and/or said display brightness (the driving current value is set S102, which is the brightness, while the voltage drop is to be detected S110 by setting the drive current fixed to estimate the

voltage drop across the anode and cathode of the EL element to configure the driving voltage Vd, col. 7 lines 18-61), and

said voltage controller (54) is configured to control said supply voltage (Vd) such that said constant current generator (88) operates in the vicinity of its compliance limit (driving current value is set S102, col. 7 lines 24-25), and

wherein said constant current generator comprises a current mirror (Shown in FIG. 6 and 9A, Col. 8 lines 17-26),

But, Sakamoto does not specifically discloses the current mirror to be a Wilson current mirror,

However, Saller et al. teaches using a Wilson current mirror over a simple current mirror produce an increase in output impedance.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have used the Wilson current mirror as taught by Saller et al. in place of for the purpose of increasing the output impedance, Col. 2 lines 2-5.

7. **Claims 8 and 24** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Everitt as applied to claim 1 above, and further in view of Koyama, US Patent 6,730,966.

Regarding claim 8, Sakamoto in view of Everitt discloses a display driver control circuitry according to claim 1, Sakamoto also discloses in Fig. 6 wherein said display comprises a passive matrix display, but Sakamoto in view of Everitt does not specifically discloses wherein said voltage controller is configured to control said supply voltage on a frame-by-frame basis.

However, Koyama teaches wherein a voltage controller is configured to control said supply voltage on a frame-by-frame basis. (Koyama discloses in Fig. 5 in col. 11 lines 24-27, a controller 112 is set to turn on the EL driver voltage during each subframe).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have used the controller to turn on the EL driver voltage during each subframe as taught by Koyama to be applied to the controller of Sakamoto for the purpose of preventing a decrease in the number of gradations (col. 5 lines 25-33).

Regarding claim 24, Sakamoto discloses the method according to claim 22. Furthermore, Claim 24 will be rejected on the same basis in view of Koyama as applied with the motivation stated above in claim 8. Thus, the combination of Sakamoto with Koyama meets the method of sensing and controlling on a frame-by-frame basis.

8. **Claims 9 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Everitt as applied to claim 1 above, and further in view of Young et al. (hereafter referenced as Young), US Patent 5,075,596).

Regarding claim 9, Sakamoto in view of Everitt discloses a display driver control circuitry according to claim 1, Sakamoto also discloses in Fig. 6 wherein said display comprises a passive matrix display having a plurality of rows of display elements, but

Sakamoto in view of Everitt does not specifically discloses wherein said voltage controller is configured to control said supply voltage on a row-by-row basis.

However, Young teaches wherein a voltage controller is configured to control said supply voltage on a row-by-row basis. (Young discloses in col. 3 lines 41-45 an adjustment to the effective pixel voltage of an electroluminescent display on a row by row basis)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have modified the controller to be configured to control said supply voltage on a row-by-row basis as taught by Young to be applied to the controller of Sakamoto for the purpose of increasing the contrast ratio of gray shades which improves the video quality of electroluminescent displays (col. 3 lines 45-51).

Regarding claim 23, Sakamoto disclose the method according to claim 22. Furthermore, Claim 23 will be rejected on the same basis in view of Young as applied as applied with the motivation is stated above in claim 9. Thus, the combination of Sakamoto with Young meets the method of sensing and controlling on a row-by-row basis.

9. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Everitt, and further in view of Rutherford, US Patent 6,861,810.

Regarding claim 21, Sakamoto in view of Everitt discloses the method according to claim 13, but does not specifically teaches wherein a said substantially constant current generator comprises a current sink.

However, Rutherford teaches in Fig. 4 a substantially constant current generator comprises a current sink (col. 4 lines 37-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have used a current sink as taught by Rutherford rather than the current source of Sakamoto for the purpose of driving the electroluminescent depending on the way the diodes are arranged in the display structure (col. 4 lines 37-39).

10. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Everitt, and further in view of Sobel, US Patent 3,714,374.

Regarding claim 33, Sakamoto in view of Everitt discloses the display driver control circuitry as claimed in claim 32 but does not discloses wherein said system to dynamically determine a said compliance limit comprises a system to find a knee in a current-voltage curve of a said constant current generator.

However, Sobel discloses a system to find a knee in a current-voltage curve of a said constant current generator (Col. 4 lines 10-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have modified the system as taught by Sobel to find the knee in a current-voltage curve of Sakamoto for the purpose of identifying the intensity of light, Col. 4 lines 10-29).

Response to Arguments

11. Applicant's arguments filed 02/13/2009 with respect to claims 1,4-5, 8-13, 20-27, and 30-34 have been considered but are moot in view of the new ground(s) of rejection.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALLISON WALTHALL whose telephone number is (571)270-3571. The examiner can normally be reached on Mon - Fri 9:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chanh Nguyen can be reached on (571) 272-7772. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

anw
March 17, 2009

/CHANH NGUYEN/
Supervisory Patent Examiner, Art Unit 2629